

CLAIMS

What is claimed is:

1. A method of controlling the data transmission rate of a mobile station in a wireless communication network, comprising:

providing a forward common power control channel for power controlling a plurality of mobile stations, said forward common power control channel being divided into a plurality of frames, with each frame including a plurality of power control groups and each power control group including a plurality of power control slots;

transmitting said rate control information to one or more mobile stations on selected power control slots on the forward common power control channel.

2. The method of claim 1 wherein the selected power control slots occur at the same slot position in at least two power groups.

3. The method of claim 1 wherein the selected power control slots occur at different positions in at least two power control groups.

4. The method of claim 1 further comprising selecting one or more power control slots on the forward common power control channel for transmitting said rate control information.

5. The method of claim 4 wherein selecting one or more power control slots on the forward common power control channel for transmitting said rate control information comprises dynamically selecting power control slots responsive to changes in the number of mobile stations being controlled.

6. The method of claim 1 wherein transmitting said rate control information to one or more mobile stations on selected power control slots on the forward common power

control channel comprises transmitting common rate control bits to two or more mobile stations in selected power control slots designated for common rate control.

7. The method of claim 1 wherein transmitting said rate control information to one or more mobile stations on selected power control slots on the forward common power control channel comprises transmitting dedicated rate control bits to one or more selected mobile stations in respective power control slots for each mobile station.

8. The method of claim 7 wherein transmitting dedicated rate control bits to one or more selected mobile stations in respective power control slots for each mobile station comprises transmitting said dedicated rate control bits for different mobile stations in different power control slots.

9. The method of claim 8 wherein transmitting said rate control information to one or more mobile stations on selected power control slots on the forward common power control channel further comprises transmitting common rate control bits to two or more mobile stations in selected power control slots designated for common power control.

10. The method of claim 1 wherein transmitting said rate control information to one or more mobile stations on selected power control slots on the forward common power control channel comprises transmitting rate control bits in the selected power control slots.

11. The method of claim 10 wherein transmitting said rate control information to one or more mobile stations on selected power control slots on the forward common power control channel further comprises repeating the rate control bits in different power control slots.

12. The method of claim 1 further comprising transmitting a common power control assignment to said mobile stations that identifies the selected power control slots.

13. The method of claim 12 wherein transmitting a common power control assignment to said mobile stations that identifies the selected power control slots

comprises transmitting the common power control assignment to the mobile stations at call setup.

14. The method of claim 12 wherein transmitting a common power control assignment to said mobile stations that identifies the selected power control slots comprises transmitting the common power control assignment to the mobile station responsive to a handoff.

15. The method of claim 12 wherein transmitting a common power control assignment to said mobile stations that identifies the selected power control slots comprises transmitting the common power control assignment a plurality of mobile stations over a common broadcast channel.

16. The method of claim 1 wherein the selected slots are within a single PCG in each frame.

17. A radio base station in a wireless communication network comprising:
a receiver to receive signals from one or more mobile stations at variable data transmission rates;
a transmitter to transmit rate control information to said one or more mobile stations to control said data transmission rates of said mobile stations in selected power control slots on a forward common power control channel, said forward power control channel being divided into a plurality of frames with each frame having a plurality of power control groups and each power control group having a plurality of power control slots; and
a controller operatively connected to said transmitter and said receiver to determine what rate control information to transmit.

18. The radio base station of claim 17 wherein the selected power control slots occur at the same slot position in at least two power groups.

19. The radio base station of claim 17 wherein the selected power control slots occur at different positions in at least two power control groups.
20. The radio base station of claim 17 wherein the controller dynamically selects the power control slots.
21. The radio base station of claim 17 wherein the rate control information comprises common rate control bits transmitted to two or more mobile stations in selected power control slots designated for common rate control.
22. The radio base station of claim 17 wherein the rate control information comprises dedicated rate control bits transmitted to one or more stations in respective power control slots on the forward common power control channel.
23. The radio base station of claim 22 wherein said dedicated rate control bits for different mobile stations are transmitted in different power control slots.
24. The radio base station of claim 17 wherein the rate control information comprises common rate control bits transmitted to two or more mobile stations in a first set of selected power control slots designated for common rate control, and dedicated rate control bits for one or more mobile stations in a second set of selected power control slots.
25. The radio base station of claim 17 wherein said rate control information comprises rate control bits.
26. The radio base station of claim 25 wherein said rate control bits are repeated in different power control slots.
27. The radio base station of claim 17 wherein said controller assigns said mobile stations to selected power control slots for purposes of reverse link rate control and wherein said transmitter transmits a rate control assignment to said mobile stations responsive to said controller that identifies the selected power control slots to be used by the mobile stations for reverse link rate control.

28. The radio base station of claim 27 wherein the rate control assignment is sent to the mobile stations at call setup.
29. The radio base station of claim 27 wherein the rate control assignment is sent to the mobile stations responsive to a handoff.
30. The radio base station of claim 17 wherein the transmitter transmits a rate control assignment over a common broadcast channel identifying the selected power control slots on the forward common power control channel allocated for common rate control.
31. A mobile station in a wireless communication network comprising:
a transmitter to transmit signals at variable data transmission rates;
a receiver to receive rate control information from a radio base station in selected power control slots on a forward common power control channel, said forward power control channel being divided into a plurality of frames with each frame having a plurality of power control groups and each power control group having a plurality of power control slots; and
a controller operatively connected to said transmitter and said receiver to vary the data transmission rate of said transmitter responsive to said rate control information.
32. The mobile station of claim 31 wherein the selected power control slots occur at the same slot position in at least two power groups.
33. The mobile station of claim 31 wherein the selected power control slots occur at different positions in at least two power control groups.
34. The mobile station of claim 31 wherein the rate control information comprises common rate control bits transmitted to said mobile station in selected power control slots designated for common rate control.

35. The mobile station of claim 31 wherein the rate control information comprises dedicated rate control bits transmitted to said mobile station in selected power control slots on the forward common power control channel.
36. The mobile station of claim 31 wherein said rate control information comprises rate control bits.
37. The mobile station of claim 36 wherein said rate control bits are repeated in different power control slots.
38. The mobile station of claim 31 wherein said mobile station receives a rate control assignment from a radio base station that identifies the selected power control slots to be used by the mobile station for reverse link rate control.
39. The mobile station of claim 38 wherein the rate control assignment is received at call setup.
40. The mobile station of claim 38 wherein the rate control assignment is received responsive to a handoff.
41. The mobile station of claim 31 wherein the rate control assignment is received over a common broadcast channel.
42. The mobile station of claim 31 wherein the controller is programmed to respond to power control bits in a designated slot in a power control group, and wherein the controller is programmed to ignore the designated slots for power control purposes when the designated slot is used for sending rate control information.